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REVISION OF THE GENUS DOASSANSIA, CORNU.

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In the year 1883. the clever French mycologist, M. Cornu (*), studying some fungi belonging to *Ustilagineæ*, proposed a new genus to be named *Doassansia*, in honor of Dr. Doassans, a diligent explorer of the mycologic flora of the Pyrenees. He proposed the following generic characters:

"Fungi in planta viva parasitici; sporæ coacervatæ, incarceratæ; cortex sori cellulis simplicibus, arcte adnatis; germinatio sporarum ut in Entylomatibus coronam sporidiolorum effingit."

Several mycologists afterwards contributed to increase the species of this genus. Among them I remember especially C. Fisch, G. Winter, J. Schrœter and W. G. Farlow, so that the genus *Doassansia*, Cornu, contains about ten entities, which are, however, as Mr. Schrœter (†) justly observes, very much like each other and can scarcely be distinguished by the character of the matrix.

I have been convinced by a comparative study that the matrix must exercise a notable influence and may probably give an explanation of the involucrum (cortex sori of Cornu). The matrix of *Doassansia* is found in every species described on plants either strictly aquatic or living in very damp places (*Alisma*, *Sagittaria*, *Potamogeton*, *Limosella*, *Butomus*, *Limnanthemum*, *Hottonia*, *Comarus*, *Lythrum hyssopifolium*, *Epilobium alpinum*); we might accordingly suppose that the "cortex sori" performed the office of protecting the organs of the fungus from excessive moisture.

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*1. M. Cornu.—Sur quelques Ustilaginees nouvelles ou peu connues. Annal. Sci. Nat. Botanique, 1883, p. 285.

†2. J. Shrœter.—Kryptogamen Flora von Schlesien von Prof. Dr. F. Cohn, III, Pilze, p. 286. Breslau, 1887.

This tegument of strictly united cells cannot be found in true Entyloma, which otherwise perfectly correspond with *Doassansia*.

In both genera the spores produce on germinating a promycelium provided only with acrogenous sporidiola disposed like a crown and united usually in twos. *Entyloma* and *Doassansia* following Schrœter's plan of classification in his work now cited belong to Cohors *Ustilagineæ*, Family *Tilletiaceæ* and Subfamily *Tilletieæ*.

In the genus *Doassansia* the spores are either oval-globose or more or less angular, pale-colored, without (following Fisch [‡]) a true endospore and germinate in water very easily. Our genus differs from the nearly allied genus *Tubercinia*, Fr., in the tegument of the sori.

The relation I have observed between the matrix and a tegument protecting the mass of spores caused me to suspect that Rostrup's *Entyloma Hottoniæ* and Berkeley's *Protomyces Comari* must be referred to *Doassansia*, and a microscopical examination confirmed fully this suspicion. By this criterion, even Johanson's *Entyloma Catabrosæ* (‖), a species living on *Catabrosa aquatica*, should belong to the genus proposed by Cornu; but I dare not affirm it, because I have seen no specimen of it.

The studies on the fungi living on aquatic plants have been somewhat neglected, so that I can make but few observations on their geographical distribution. Some species like *Doassansia Limosellæ*, Schrœt, *D. Neisslii*, De Ton., are thus far limited to Germany; *D. Cormari*, De Ton. et Massee to Great Britain; *D. Hottoniæ*, De Ton., to Denmark; *D. Cormari* (Berk) De Ton. et Massee to Great Britain; *D. Epilobi*, Farl., *D. decipiens*, Wint., *D. occulta*, Cornu, to North America; *D. Martianoffiana*, Schrœ., to Siberia and Germany; *D. Alisimatis*, Cornu, and *D. Sagittaria*, Fisch., are spread more widely; the former has been found in Italy, France, Germany, Finland, Sweden, Siberia and North America; the latter in Italy, France, Belgium, Germany, England and North and South America.

I close these short observations with many thanks to the M. Prof. P. A. Saccardo who, with his usual kindness, gave me free access to his valuable mycologic herbarium and otherwise aided me in the preparation of this paper.

1. DOASSANSIA ALISMATIS (Nees) Cornu. Sur quelques Ustilaginees nouvelles ou peu connues, p. 285, t. XVI, f. 1-4 (1883); Schrœter Pilzfl. Schles, p. 286; *Sclerotium Alismatis*, Nees., in Fr. Syst. Mycol., Vol. II, p. 257 (1822); *Perisporium Alismatis*, Fries., Syst. Mycol., Vol. III, p. 252; *Dothidea Alismatis*, Lasch., in Rabenhorst Herb. Mycol., I edit., n. 553 et II edit., n. 162; *Uredo Alismacearum*, Crouan, Fl. Finist, p. 8 (?); *Entyloma Alismacearum*, Sacc., in Michelia II, p. 44, n. 434; Mori Funghi di Modena, n. 14; *Protomyces macularis*, Fuckel., in Thum. Myc. Univ., n. 1417, non

‡ 3. C. Fisch.—Zur Entwickelungsgeschichte von *Doassansia Sagittariæ*. Berichte der deutsch. botan. Gesellschaft, II. Berlin, 1884.

‖ 4. Johanson.—Svampar fran Island. Oefversigt af Kongl. Vetenskaps. Akademisy Fœrhandlingar n. g. Stockholm, 1884.

Sacc., in Michelia, I, p. 13 (*Physoderma maculare*, Wallroth). Exsicc.:— Rabenhorst, Herb. Mycol., I edit., n. 553, II edit., n. 162; Ellis North American Fungi, n. 1485; Roumeguere Fungi Gallici Exsiccati, n. 1358; Thumen, Mycoth. Univ., n. 1417.

"Soris amphigenis, pustuliformibus, brunneis, usque ad 300 μ in diameter metientibus, utrinque prominulis, rotundatis vel ellipsoideis, rarius irregularibus, numerosis, in maculis ut plurimum determinatis orbicularibus, 4—10 mm. longis, raro subconfluentibus circinatim dispositis; sporis sphæroideis vel ovoideis obtuseque angulatis, 10–14 (rarius 18) x 8–11 μ, episporio tenui, levi, dilute brunneo donatis, plasmate pallido subhyalino fœtis; tegumento communi bene evoluto, obscure brunneo; sporidiolis longe cylindraceis, numerosis ad apicem promycelii evolutis."

Habitat in foliis *Alismatis Plantaginis* in Italia, Gallia, Germania, Suecia, Finlandia nec non Siberia occidentali, et America boreali, socio sæpe *Cylindrosporio Alismacearum*, Sacc., quocum metagenetice connexa videtur, Cfr. Saccardo Syll. Fungorum, Vol. III (Sphæropsideæ et Melanconieæ), p. 740, n. 3865.

The identity of *Uredo Alismacearum*, Crouan, with this species remains a little doubtful, because the description given in Florule de Finistere is very imperfect. "Pustules peu proeminentes, sphæriques ou ovoides, reunies en petits groupes; spores sphæriques, jaunes; Sur la face inferieure de l'Alisma Plantago." This description could be applied also to *Physoderma maculare*, Wallr., and only a comparison with authentic specimens could decide the question. The same doubt can be raised about species of Nees. On the contrary, *Entyloma Alismacearum*, Sacc., of which I have studied several French specimens collected by the late Ab. Letendre and Italian ones collected by Prof. A. Mori near Modena, corresponds perfectly to *Doassansia Alismatis*, Cornu.

2. DOASSANSIA SAGITTARIÆ (West.) Fisch., in Berichte der deutsch, botan. Gesellsch., II, p. 405 (1884); Winter et Demetrio, Beitr. Pilzfl. Missouri ser I, n. 1; Briard Champ. nouv. Aube, n. 29; Schrœter Pilzfl. Schles, p. 286; *Uredo Sagittariæ*, Westend. Herb. crypt. Belg., n. 1177; *Physoderma Sagittariæ*, Fuckel Fungi Rhenani, n. 1549; *Protomyces Sagittariæ*, Fuckel., Symbolæ Mycologicæ, p. 75; *Protomyces Bizzozerianus*, Sacc., in Michelia, I, p. 97; Fungi Italici autogr. delineati, f. 103; *Entyloma Bizzozerianum*, Sacc., in Michelia, II, p. 135; Spegazz. Fungi Argentini, pugillus quartus, p. 21, n. 55. Exsicc :—Westendorp, Herb. crypt. belg., n. 1177; Fuckel, Fungi Rhenani, n. 1549; Sacc., Mycotheca Veneta, n. 889; Gaudoger, Fl. Gallica Exsicc, n. 744; Vize, Micro-Fungi Britannici, n. 50.

"Soris hypophyllis, pustuliformibus, flavescenti-brunneis, usque ad 100 μ in diameter metientibus, plerumque rotundatis, numerosis, subinde confluentibus, in maculis orbicularibus, 5—10 mm. latis, amphigenis, pallide flavescentibus, centro obscurioribus dispositis; sporis irregulariter globosis, subangulato-compressis, plerumque, 9—14 x 9—12 μ, episporio crassiusculo, levi, flavescenti vel hyalinulo donatis, plasmate, subtiliter granuloso foetis, rarius biguttatis; tegumento communi bene evoluto, brunneo; sporidiolis ut in specie praecedente."

Habitat in foliis *Sagittaria sagittifoliæ, variabilis et montevidensis* in Italia, Gallia, Germania, Britannia, Belgio nec non Missouri Americæ borealis et Republica Argentina, Americæ, Australis.

I have been able to ascertain the absolute identity of *Physoderma Sagittariæ*, Fuck., *Uredo Sagittariæ*, West., and *Entyloma Bizzozerianum*, Sacc., by the examination of authentic specimens. I have received a specimen of the first species taken from the classic Fuckelian collection Fungi Rhenani by the M. Prof. I. Briosi, of Pavia (to whom I am very much obliged); the typical specimens of the second and third species are contained in Prof. Saccardo's herbarium.

By a microscopic examination, I am convinced that the word "magnis," applied by Fuckel to the spores of *Physoderma Sagittariæ* must be referred to the sori, because the diameter of the spores is 10—12 μ, which agrees with the characters of Westendorp and Saccardo's species. The synonymy of *Doassansia Sagittariæ* is therefore well defined.

3. DOASSANSIA MARTIANIOFFIANA (Thum.) Schrœt. Pilzfl. Schles., p. 287 (1887); *Protomyces Martianoffianus*, Thumen.; Pilzfl. Sibiriens, II, p. 123 (1878); Berlese et De Toni Syll. Phycomyc. in Sacc. Syll. Fung. Omnium, Vol. VII, p. 320, n. 1125.

"Soris hypophyllis, subpustuliformibus, ochraceo-fuscidulis, ut plurimum, 60—80 μ in diameter metientibus, numerosis, dense gregarius, in maculis usque ad 5 mm. latis, orbicularibus, indeterminatis, haud marginatis, flavescentibus dispositis maculasque contrapositas (epiphyllas) aurantiaco-flavidulas v. fuscidulas haud limitatas efficientibus; sporis irregulariter globosis, vel elliptico-globosis, plerumque 9—11, rarius 16 μ in diameter, episporio tenui, levi, dilute brunneolo, plasmate subtiliter granuloso, pallido fœtis; tegumento communi arcte adnato, pallide colorato."

Habitat in foliis vivis fructibusque *Potamogetonis natantis et graminei* in Germania et pr. Minussinsk Sibiriæ occidentalis.

The following species (*D. occulta*, Cornu), which grows also on *Potamogeton*, is but little different.

4. DOASSANSIA OCCULTA (Hoffm.) Cornu, in Farlow's Notes on a Fungus parasitic on species of *Potamogeton*, p. 2; *Sclerotium occultum*, Hoffman; Icon. Analyt. Fungor, p. 69, t. XVI, f. 3 (1862); *Doassansia (?) Farlowii*, Cornu, Sur quelques Ustilaginees nouvelles ou peu connues, p. 287 (1883).

"Soris ovatis vel globosis, ovariicolis, brunneis, compressis, numerosis, sparsis, 180—200 μ longis, 140—180 μ latis; sporis (immaturis [?]) globosis, 20 μ circ. diameter, pallide coloratis, tegumento communi valde evoluto, obscure colorato."

Habitat in ovariis fructibusque maturis, *Potamogetonis natantis et lucentis* in Germania (Irmisch et Hoffmann) nec non *Potamogetonis Vaseyi, pusilli, perfoliati*, var. *lanceolati et natantis*, Ottawa Americæ borealis (J. Fletcher). The fruits are white-greenish, red-brown spotted, swelled by the fungus.

5. DOASSANSIA NIESSLII, De Ton. *Protomyces punctiformis*, Niessl. Beitr. zur Kenntn. der Pilze, p 16 (1872); Berlese et De Toni; Syll. Phycomyc. in Sacc. Syll. Fung. omnium, Vol. VII, p. 321, n. 1131; *Doassansia punctiformis* (Niessl), Schrœt. Pilzfl. Schles., p. 287 (1887), non Winter (1886).

"Soris minutissimis, punctiformibus, 50—60 μ in diameter metientibus, vix convexis, numerosis, gregariis, subepidermide (macula subnulla) nidulantibus, griseo brunneis vel melleis ; sporis subglobosis vel irregulariter angulatis, 9—11 μ in diameter, episporio levi, dilute brunneo donatis; tegumento communi parum distincto."

Habitat in foliis *Butomi umbellati*, pr. Brunn Moraviæ (Niessl) et Breslau Silesiæ (Schrœter).

I have thought necessary and convenient to change the name of this *Doassansia*, dedicating it to Mr. Niessl, the first one who illustrated it, because the late Dr. Winter, previous to the reduction of *Protomyces punctiformis*, Niessl, to *Doassansia punctiformis*, Schrœt , gave the latter specific name to a different *Doassansia* living on *Lythrum hyssopifolium*.

6. DOASSANSIA PUNCTIFORMIS, Winter. Fungi Australienses in Revue Mycologique, 1886, p. 207, non Schrœter (1887).

"Soris amphigenis, globosis, punctiformibus, minutissimus, sparsis vel subgregariis, utrinque prominulis, fuscidulis; sporis numerosis, conglobatis, rotundato-polygonis, isodiametricis, 10—12 μ in diameter, vel parum elongatis, usque ad 16 μ longis, 10.5 μ latis, episporio tenui, levi, æquali donatis, subhyalinis ; tegumento communi ex uno strato parenchymatico cellularum polygoniarum, membrana crassiuscula, badia, minutissime granulata præditarum efformato."

Habitat in foliis vivis *Lythri hyssopifolii*, pr. Melbourne Australiæ (Reader).

7. DOASSANSIA LIMOSELLÆ (Kunze) Schrœter. Pilzfl. Schles, p. 287 (1887); *Protomyces Limosellæ*, Kunze in Rabenh. Fungi Europæi, n. 1694; *Entyloma Limosellae*, Winter Die Pilze, p. 115; Exsicc. Rabenhorst, Fungi Europæi, n. 1694.

"Soris plerumque hypophyllis, verruculiformibus, 60—100 μ in diameter metientibus, in maculis orbicularibus, 1—2 mm. latis, brunneolis dispositis; sporis globosis vel irregulariter sphæroideis vel oblongis sæpeve angulatis, 9—14 μ in diameter, episporio tenui, levi, inæqualiter crasso, pallide brunneo donatis; tegumento communi ut in D. Niesslii."

Habitat in foliis *Limosellæ aquaticæ* in Germania.

8. DOASSANSIA DECIPIENS, Winter. New North American Fungi in JOURNAL OF MYCOLOGY, I, p. 102 (1885).

"Soris epiphyllis, greges minutos, rotundatos irregularesve, interdum confluentes pallide fusco-luteos, in macula indeterminata luteola insidentes, 1—5 mm. in diameter metientes formantibus, punctiformibus, rotundatis vel ellipticis, plerumque dense stipatis, haud raro cofluentibus, 100—200 μ latis, immersis, fuscis; sporis numerosissimis, densissime conglobatis, rotundato-polygonis, isodiametricis vel subellipticis, sæpe

irregularibus, 10—16 μ in diameter, episporio levi donatis, pallide fuscidulis, in planta adhuc viventi germinantibus; tegumento communi tenuissimo, pseudoparenchymatico e cellulis fuscis contexto denseque applicato; sporidiolis filiformibus, tenuissimis, sæpius flexuosis, usque ad 70 μ longis, vix 1 μ crassis."

Habitat in foliis *Limnanthemi lacunosi*, pr. Green Pond, Morris Co., N. Y., Americæ borealis (E. A. Rau).

9. DOASSANSIA EPILOBII, Farlow in Botanical Gazette, 1883, p. 277; Crypt. Flora White Mountains, p. 239. Exsicc.:—Ellis, North American Fungi, n. 1186.

"Sori globosis vel confluendo lobulatis, 80—200, rarius 250 μ in diameter metientibus, amphigenis, prominulis, plerumque ad apices foliorum gregatim collectis, in maculis sive areis pallide flavescentibus dispositis; sporis e globoso irregulariter polyhedricis, 7. 5—17 (plerumque 10—14 μ) in diameter, dense congestis, episporio tenuiusculo, levi donatis, pallide coloratis; tegumento communi e cellulis crasse tunicatis, atro-brunneis efformato."

Habitat in foliis *Epilobii alpini* ad margines torrentis "King's Ravine" in America boreali (Farlow).

10. DOASSANSIA HOTTONIÆ (Rostr.) De Ton. *Entyloma Hottoniæ*, Rostrup in Thumen Mycotheca Universalis, n. 2222. Exsicc.:—Thumen, Mycoth. Univ., n. 2222.

"Soris hemisphæricis, gregariis, rufescentibus, 80—200 μ in diameter, raro oblongis; sporis rotundato-angulatis, 9—14 μ in diameter, episporio tenui, levi donatis, dilute fuscidulis; tegumento communi arcte adnato, distincte evoluto, brunneo."

Habitat in foliis vivis *Hottoniæ palustris*, pr. Skarup ins. Fioniæ in Dania (Rostrup et Johanson).

11. DOASSANSIA COMARI (Berk. et Br.), De Ton. et Massee in Herb. Kewensi; *Protomyces Comari*, Berk. et Broome in Ann. Nat. Hist., No. 1708; Berlese et De Toni, Syll. Phycomyc. in Sacc. Syll. Fung. omnium, Vol. VII, p. 321, No. 1135.

"Soris gregariis vel sparsis, siccitate atris, 1—1.5 mm. in diameter, metientibus; sporis late ellipticis, 10 x 7 μ, levibus, in sicco dilute vinosis, tegumento communi bene evoluto."

Habitat in foliis *Comari palustris*, pr. Forfar Britanniæ.

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27. Ellis, J. B., and Everhart, B. M.—North American Fungi.

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33. Saccardo, P. A.—Mycotheca Veneta.

34. Thumen, F.—Mycotheca Universalis.

35. Vize, J. E.—Micro-Fungi Britannici.

A LICHEN NEW TO THE UNITED STATES.

BY EUGENE A. RAU.

Messrs. Eckfeldt & Calkins, in their list of the Lichen-Flora of Florida, published in a recent number of this JOURNAL, include some rare and interesting species. In regard to their No. 297, *Trypethelium heterochrous* (Mont.) Tuck., very rare, introduced from Cuba, I would beg to remark that I collected this lichen in April. 1885, and sent specimens to Dr. Eckfeldt for identification. For the benefit of those who have opportunities to search for lichens in Florida, I will mention that this rare species was found along the shore of Lake Osceola, Winter Park, in Orange county, growing upon living branches of *Ilex Dahoon*, Walt.

NEW WESTERN UREDINEÆ.

BY S. M. TRACY AND B. T. GALLOWAY.

Among the *Uredineæ* collected last summer by Tracy & Evans, we find the following species which appear to be new:

UROMYCES ARIZONICA, Tracy & Gal.—I. Hypophyllous; spots conspicuous, rather large, pale; æcidia numerous, in definite clusters, scattered or often crowded, small, short, border often somewhat coarsely torn; spores subglobose, epispore thin, smooth, 18—21 μ.—II and III. Epiphyllous; spots small, round or oval, reddish-brown, long covered by the epidermis.—II. Spores oval, pale, epispore thin, minutely echinulate, 20—22 x 23—25 μ.—III. Spores globose or obovate, apex sometimes slightly thickened, brown, 20—22 x 25—27 μ; pedicel one and a half to two times the length of the spores, hyaline, tapering towards the base. On leaves of *Eriogonum racemosum*, Flagstaff, Arizona, June 27, 1887.

PUCCINIA FRAGILIS, Tracy & Gal.—III. Amphigenous; sori scattered, long covered by the epidermis, which at length is irregularly ruptured; spores broadly oval, dark brown, minutely roughened, 21—33 x 30—34 μ, apex rounded, obtuse, not thickened, very slightly constricted, pedicel less than half the length of the spore, hyaline, very fragile. On leaves of *Arenaria pungens*, Reno, Nevada, June 19, 1887.

PUCCINIA CAULICOLA, Tracy & Gal.—II. Hypophyllous; sori very small, very numerous, covering the entire surface; spores subglobose, epispore thick, minutely roughened, usually with one or more prominent vacuoles, light brown, 15—17 x 20—22 μ.—III. On stems; sori scattered, usually elongated, black; spores oval, not constricted, 25—27 x 35—40 μ; apex much thickened, nearly hyaline, often with a similar thickening on one side of the lower cell, smooth; pedicel nearly hyaline, very long, several times the length of the spores. On *Salvia lanceolata*, Canon City, Colo., Aug. 21, 1887.

PUCCINIA VERTI-SEPTA, Tracy & Gal.—II and III. Amphigenous; sori prominent, black, round.—II. Spores oval, pale brown, 20—22 x 23—25 μ, epispore thick, slightly roughened.—III. Spores compressed-globose, divided by a distinct vertical septum, thus making each cell short boat-shaped, 28—30 x 34—35 μ; epispore thick, coarsely tuberculate; apex thickened, pedicel very long, variously bent and curved, hyaline. On leaves of *Salvia ballotæflora*, New Mexico, August.

ÆCIDIUM DRABÆ, Tracy & Gal.—Hypophyllous; æcidia scattered over the entire surface, bright yellow, large, border lacerate or coarsely fringed, spreading; spores globose or oval, greenish-yellow, epispore thick, smooth, 18—21 x 24—28 μ. On leaves of *Draba aurea*, Coolidge, New Mexico, June 20, 1887.

ÆCIDIUM HELIOTROPII, Tracy & Gal.—Amphigenous; spots not large, definite, purplish; æcidia pale yellow, circinating, large, very long, the length about four times the diameter, border entire or sometimes lacerate; spores subglobose, epispore thin, minutely roughened, 16—19 μ. On leaves and stems of *Heliotropium curassavicum*, Albuquerque, New Mexico, June 17, 1887.

ÆCIDIUM ELLISII, Tracy & Gal.—Amphigenous; spots rather small; æcidia in definite clusters, often circinate, large, surrounded at the base by the ruptured epidermis, which is quite distinct, light orange-yellow, border lacerate; spores subglobose, with numerous vacuoles, epispore thick, slightly roughened, 18—22 μ. On leaves of *Chenopodium album*, Albuquerque, New Mexico, June 16, 1887.

ÆCIDIUM LEPIDII, Tracy & Gal.—Spots conspicuous; æcidia prominent, circinating, short, irregularly torn, soon becoming somewhat pulverulent; spores subglobose, epispore thin, 12—14 μ. On leaves of *Lepidium montanum*, Utah, July, 1887.

AGARICS OF THE UNITED STATES—GENUS PANUS.

EDWARD J. FORSTER, M. D., BOSTON.

The whole fungus is fleshy-coriaceous, tough, drying up, of fibrous texture, which radiates into the hymenium; gills concrete with the hymenophore, unequal, at length *coriaceous, edge quite entire;* spores even, white, somewhat cylindrical in species which have been examined. Growing on wood, various in form, lasting long. A genus which must be inserted in this series (between *Lentinus* and *Xerotus*) on account of its flesh, which is pliant and somewhat coriaceous, even in the gills, allied to the *Lentini*, but differing from them in the firmer, coriaceous and very entire gills. Either poisonous or owing to the toughness of the substance not suitable for eating. Fr. Hym. Eur., p. 487, Stevenson, British Fungi, Vol. II, p. 158. Name, *Panus*, a swelling or tumer, given to an arboreal fungus by Pliny, vide Fr. Epicr., p. 396.

The following are all the species (14) which have been described as found in the United States at this time. Fries gives only five of these in his Hym. Europ., viz.: Nos. 1, 2, 5, 6 and 9. *Panus rudis*, B. & C., is given in Sprague's list of New England fungi, but a description was never published, and the name is occupied by Fries, Hym. Eur., p. 489; it may have been a mistake for *Paxillus rudis*, B & C.

* Pileus irregular, stem excentric, 1, 2, 3, 4.

** Stem definitely lateral, 5, 6, 7, 8, 9.

*** Pileus resupinate, sessile or extended behind, 10, 11, 12, 13, 14.

* 1. PANUS CONCHATUS, Fr.

Pileus 2′—4′ broad, cinnamon, then becoming pale, fleshy-pliant, thin, unequal, excentric or dimidiate, flaccid, squamulose when old; stem ½′ long, 4″ thick, unequal, often compressed, pubescent at the base; gills strongly decurrent in parallel lines by no means anastomosing but here and there branched and unequal, at first whitish or pale flesh color, at length ochraceous wood color, crisped when dry, cæspitose, often imbricated and growing into each other. No form is constant. So much allied to *P. torulosus* that the real difference is not apparent. It is thinner, more conchate and more lobed than that species. Stevenson British Fungi, Vol. II, p. 159. Curtis found this in South Carolina, Frost near Amherst, Mass., Johnson in Minnesota, Cragin in Kansas and Morgan on trunks and branches of beech in the Miami Valley, Ohio. Name, *concha*, a shell, shell-shaped.

2. PANUS TORULOSUS, Fr.

Pileus 2′—3′ broad, somewhat flesh color, but varying, rufescent-livid and becoming violet, entire, but very excentric, fleshy, somewhat compact when young, plano-infundibuliform, even, smooth; flesh pallid; stem short, commonly 1′, solid, oblique, tough, firm, commonly with gray but often violaceous down; gills decurrent, somewhat distant, simple, separate behind, reddish, then tan color. Very changeable in form, at first fleshy-pliant, at length coriaceous. In the covering of the stem it approaches *Paxillus atro-tomentosus*, but there is no affinity between them. On old stumps. Spores 6 x 3 mk. W. G. Stevenson, British Fungi, Vol. II, p. 159. New York, Peck, 30th Rep., p. 44, on oak stumps, in May; Amherst, Mass., C. C. Frost; Kansas, Cragin; Minnesota, Johnson. Name, *torulus*, a tuft of hair, from the hairy down on the stem.

3. PANUS STRIGOSUS, B. & C.

Pileus white, 8 inches across, excentric, clothed with coarse strigose pubescence; margin thin; stem 2—3 inches high, 1 inch or more thick, strigose like the pileus; gills broad, distant, decurrent. Allied to *Panus laevis*. On oak stumps. New England, G. J. Sprague; Pennsylvania, Dr. Michener, Annals and Mag. N. H., October, 1859, Cent. N. A. F., No. 99; New York, Peck, 26th Rep., p. 66; on decaying wood of deciduous trees, Croghan, September. It is remarkable for its large size and the dense hairy covering of the pileus and stem. Minnesota, 1876, Johnson, August; Maryland, Banning. Name, *striga*, a swath, from character of pubescence.

4. PANUS TOMENTOSUS, Bundy.

Pileus 1′—1½′ wide, rather fleshy, becoming tough, depressed, nearly plane in some specimens, subinfundibuliform, dull yellowish, merging into purple, tomentous, outer zone densely covered with tawny hairs; margins incurved; gills narrow, decurrent, white, at first tinged with purplish; stem excentric, short, thicker below, densely covered with tawny hairs, 1′—1½′ high. Ironton, July, on oak logs. Geology of Wisconsin, Vol. I, p. 398, 1883. Name, *tomentum*, a stuffing for cushions (wool, hair, etc.), from the hairs on the pileus.

** 5. PANUS STIPTICUS, Fr.

Pileus ½′—1′ broad, cinnamon, becoming pale, acrid, thin, but not membranaceous, reniform, pruinose, the cuticle separating into furfuraceous scales; stem not reaching 1′ long, solid, definitely lateral, compressed, dilated upwards, ascending, pruinose, paler than the gills; gills ending determinately (not decurrent), thin, very narrow, crowded, elegantly connected by veins, cinnamon; gregarious cæspitose, remarkable for its astringent taste. The pileus sometimes has an infundibuliform appearance with lobes all round. On stumps; common. Reckoned poisonous spores obovoid-sphæroid, 2—3 x 1—2 mk.:—3 x 4 mk. W. G. S. Stevenson, British Fungi, Vol. II, p. 160. This has been found in New England by C. J. Sprague; South Carolina, Ravenel; Amherst, Mass., C. C. Frost; Florida, Calkins; New York, Peck, 33d Rep., p. 36, who says it "usually occurs on trunks of deciduous trees, but occasionally it is found on hemlock trunks;" Ohio, Morgan; Kansas, Cragin; Louisiana, Langlois. Ellis has distributed it in his third Cent. N. A. F. It is very common. Name, *stypticus*, astringent.

6. PANUS FARINACEUS, Schum.

Pileus cinnamon-umber, somewhat coriaceous, flexuous, cuticle separating into whitish bluish-grey scurf; stem short, lateral, of the same color as the pileus; gills determinately free, distinct, paler. The habit is that of *P. stipticus*. Stevenson, British Fungi, Vol. II, p. 160. Morgan, the only American writer who mentions this species (Mycologic Flora Miami Valley, Ohio), writes: "The pileus is brown or blackish, with a dense white pubescence. What I have found grew out of the cracks in the hickory bark." Name, *farina*, meal, from the scurf on the pileus.

7. PANUS LÆVIS, B. & C.

Pileus 3′ broad, orbicular, slightly depressed, white, clothed in the center with long, intricate, villous, rather delicate hairs, which are shorter and more matted towards the inflected margin, substance rather thin; stipe 3′ long, ½′ thick, attenuated upwards, generally excentric, sometimes lateral, not rooting, solid, strigose below, closely villous like the margin of pileus; gills rather broad, entire, decurrent, but not to a great degree; the interstices even above, behind clothed with the same coat as the top of the stem; spores white. A most distinct species, remarkable for its great lightness when dry and the long villous but not compressed, compound flocci of the pileus. Sometimes the center of the pileus be-

comes quite smooth when old. Trunks, South Carolina, Curtis, Annals and Mag. N. H., December, 1853. Cent. N. A. F., No. 33. New York, oak stumps, Wading River, September, Peck, 33d Rep., p. 21, writes: "The margin of the pileus is sometimes marked by small, oblique elevations or ridges which unite inwardly and thus form, with the edge of the pileus, small triangular spaces. Sometimes the two elevated lines which form the sides of a triangle divide near the margin and thus form two very small additional triangles. The pure white color and regular even pileus make this a very pretty species. The color, however, becomes slightly tinged with yellow in drying. Name, *levis*, smooth.

8. PANUS DEALBATUS, Berk.

Pileus three-quarters of an inch broad, flabelliform, sometimes lobed; when moist, tough and flexible, umber-brown, striate; when dry, white and minutely cracked, as if whitewashed, with a dark border; stem quarter of an inch or more high, dilated upwards, compressed and often canaliculate, perfectly lateral, of the same color and texture as the pileus; gills narrower, umber-brown, distinct, without any veins in the interstices, decurrent and clothed below with a white stratum; when dry, brown, with a white edge. Allied to *A. farinaceus*, Schum., but at once distinguished by its very decurrent gills. There are few prettier fungi than this when dry. Sometimes the stem is forked and each division produces a distinct pileus. (Des. New Species Fungi, etc., Thomas G. Lea, Cincinnati, 1849.) This fungus was discovered by Mr. Lea, on a dry dead branch, Waynesville, Ohio, Aug. 26, 1844; South Carolina, Curtis; Ohio, Morgan (Miami Valley) on branches of elm; New York, Peck, 33d Rep., p. 21; decaying wood of deciduous trees, Vernon, August. Name, *de-albo*, to whitewash, from appearance of pileus when dry.

9. PANUS FŒTENS, Secr.

Pileus pliant, spongy, spathelike, convex-depressed, somewhat silky, dirty white, stretched out behind into a long stem, the upper part of which is channelled; gills decurrent, firm, pressed together, flesh yellow, odor fœtid; stem 1½′ long, 4″ thick; pileus 2½′ broad. On pine trunks. Fr. Hym. Eur., p. 489. Name, *fœtor*, a stench, from the smell. This species is mentioned only by M. A. Curtis, who found it on dead wood in South Carolina.

* * * 10. PANUS DORSALIS, Bosc.

Pileus, 1½′—3′ broad, fleshy coriaceous, at first resupinate, afterwards expanded, sessile, somewhat reniform, tomentose, luteous, expallent, often imbricate and sessile or sometimes slightly stipitate; gills broad, rather distant, orange tawny; spores same color. On stumps and trunks. North and South Carolina, autumn and winter, dead pines. M. A. Curtis; South Carolina, winter, dead trunks of pine, Ravenel; Ohio, Morgan. The latter writes: "This I have no doubt is the same plant as *Agaricus nidulans*, Fr. I have observed it carefully in every stage and it agrees perfectly with the figure and description of Fries' *Icones*, except the substance is leathery and persistent, not putrescent." (Mycologic Flora

of Miami Valley, Ohio.) Bosc. described this plant in the Berlin Magazine, 1811. Massachusetts, C. J. Sprague, Pro. B. S. N. H.; Florida, W. W. Calkins. Journ. Mycol., Vol II, p. 28; New York, C. H. Peck, Reports Botanist, 22d, p. 81, 30th, p 71. Peck writes: "The form which occurs here does not agree with the description of the species. It has no stem and is of a buff or pale yellow color. The cuticle does not break up into floccose scales, but the pileus is strigose hairy, especially toward the margin. The spores are of a beautiful fleshy-pink color like the lamellæ of young *Agaricus campestris*. It grows on beech and birch. I have not found it on pine. If the type is accurately described, our plant ought at least to be considered a distinct variety." Ellis has distributed this species in N. A. F., No. 912. Name, *dorsum*, the back, from it first being resupinate.

11. Panus angustatus, Berk.

Pileus about one inch long, coriaceo-submembranaceous, spathulate or flabelliform, narrowed behind, white, dirty white or yellowish, most minutely pubescent; upper stratum gelatinous; stem extremely short, being in fact little more than a continuation of the pileus; gills very narrow, close, decurrent, white, very minutely pubescent, yellowish when dry. Somewhat resembling *Panus copulatus*. Discovered by Mr. Thos. G. Lea on a dead log, Waynesville, Ohio, Sept. 10, 1844, Catalogue Plants of Cincinnati, 1849; South Carolina, M. A. Curtis; Morgan (Mycologic Flora of Miami Valley, Ohio) says it is common on old logs in woods. Name, *angustus*, narrow, from its pileus being narrowed behind.

12. Panus alliaceus, B. & C.

Small, strongly alliaceous, highly offensive; pileus 2′ or more across, stemless, suborbicular, at length slightly elongated, minutely tomentose behind, more distinctly so in front, where it is sometimes rather scabrous and hispid, dirty white, inclining to tawny or yellow, especially towards the edge; often more or less effused behind; gills of the same color as the pileus, distant, entire, moderately broad, attenuated behind, interstices even; spores white, with a very slight yellow tinge, minute, oblong, strongly curved. A fine species allied to *P. fœtens*, but without the least trace of a stem. The curved spores are very remarkable. In the young plant the pileus is nearly resupinate. On the putrescent stumps apparently of *Nyssa*, Curtis; also on *Salix nigra*, Ravenel, Annals and Mag. N. H., December, 1853, Cent. N. A. F., No. 34. Name, *allium*, garlic, from the smell.

13. Panus operculatus, B. & C.

Fasciculate, erumpent; pileus cup-shaped, one-half inch or more across, fixed by the apex, rufous, clothed with a scurfy pubescence, which at length vanishes; gills narrower, of the same color as the pileus, at first covered by a tympanoid veil. South Carolina, Curtis; New England, on bark, D. Murray. Allied to *P. Delastrii*, Mont. Annals and Mag. N. H., October, 1859, Cent. N. A. F., No. 100; New England, C. J. Sprague, Pro. B. S. N. H.; C. C. Frost, Cat. Plants, etc., Amherst College; New York, C. H. Peck, Rep. 27, p. 97, Rep. 30, p. 71, "not rare on

alder trunks and branches, the veil or operculum is very fugacious, so that it is rarely seen except on very young plants." Name, *operculo*, to cover, from being first covered by a veil.

14. PANUS SALICINUS, Peck.

Pileus 4″—6″ broad, firm, thin, convex, deflexed or subpendant, hygrophanous, minutely farinaceo-tomentose, pinkish-grey; gills moderately broad and close, converging to an excentric point, dark ferruginous; stem very short or obsolete, obliquely attached to the vertex of the pileus; plant gregarious. Trunks of dead willows, *Salix discolor*, Center, N. Y.; 24th Rep., p. 77-78; Minnesota, Johnson, September and October. Name, *salix*, willow tree, from its habitat.

NEW KANSAS FUNGI.

BY J. B. ELLIS AND W. A. KELLERMAN.

VERMICULARIA SPARSIPILA, E. & K.—On living leaves of *Callirrhoe involucrata*, Rooks Co., Kansas. Leg. Mr. E. Bartholomew, No. 25. On dirty brown irregular-shaped spots ½—1 cm. in diameter; perithecia epiphyllous, erumpent, pale, 75 μ in diameter, subastomous, thickly scattered over the spots and sparingly clothed with a few (2—6) erect, dark brown, continuous hairs, 40—60 x 5 μ, arising mostly from near the vertex; sporules oblong-elliptical, 2-nucleate, 18—20 x 5—6 μ, hyaline, ends obtuse. *Aecidium tuberculatum*, E. & K., occurs on the same leaves.

AECIDIUM TUBERCULATUM, E. & K.—On leaves of *Callirrhoe involucrata*, Rooks Co., Kans. Leg. E. Bartholomew, No. 25. Amphigenous but more abundant below, springing from the midrib and nerves of the leaf, but without any definite spots; æcidia at first tubercular-hemispherical, ½—¾ mm. in diameter and closed, then open and cup-shaped, with the margin slightly toothed; spores deep orange-yellow, variable in size and shape, subglobose, 18—20 μ to subelliptical, oblong or ovate, 20—27 x 18—23 μ. This is quite distinct from *Aecidium Callirrhoes*, E. & K., which is on definite spots with smaller æcidia.

PHLEOSPORA CHENOPODII, E. & K.—On leaves of *Chenopodium album*, Manhattan, Kans., May, 1887. Kellerman & Swingle, No. 1187. Spots amphigenous, suborbicular, ¼—½ cm. in diameter, pale rusty brown, with a raised greenish margin and more or less concentrically wrinkled; perithecia amphigenous, erumpent-superficial, black, rather large, scattered, only imperfectly developed, the lower part nearly obsolete, broadly perforated above; sporules oblong-cylindrical, obtuse at each end, 3-septate, pale brownish, constricted at the septa, 20—35 (mostly 20—25) x 8—11 μ. This is quite distinct from *Septoria Chenopodii*, West., which has much narrower (and according to our European specimens) continuous sporules.

SEPTORIA GLYCYRRHIZÆ, E. & K.—On living leaves of *Glycyrrhiza lepidota*, Rooks Co., Kan. Leg. E. Bartholomew, No. 26. On dirty brown, subindefinite, rather irregular-shaped spots, 2—6 mm. in diameter; perithecia epiphyllous, minute, abundant, inconspicuous; sporules cylindrical-clavate, 40—60 x 3 μ, continuous.

SEPTORIA LUPULINA, E. & K.—On leaves of *Humulus Lupulus*, Cloud Co., Ks., Oct., 1887. Leg. M. A. Carleton. Spots pale yellowish-white, subangular and limited by the veinlets, 2—4 mm. across, subconfluent and occupying the greater part of the leaf; perithecia scattered, innate but visible through the cuticle on the upper side of the leaf, appearing of a dark lead color, sublenticular (150 μ), of coarse cellular structure; sporules 35—45 x 2—2½ μ, curved, a little thicker at one end, obtuse. We have no specimens of *S. Humuli*, West., but that is said to have the perithecia "scattered in the center of the spots" and smaller, having also smaller sporules. On the under side of the leaves in the Kansas specimens are minute, superficial, black perithecia filled with oblong-elliptical sporules, 2—2½ x ½ μ.

PHYLLOSTICTA CELTIDIS, E. & K.—On living leaves of *Celtis occidentalis*, Rooks Co., Kansas. Leg. E. Bartholomew, No. 103. Spots amphigenous, dirty brown, suborbicular or more or less irregular, 2 mm.—1 cm. in diameter, becoming paler (subcinereous) above; perithecia minute, black, hypophyllous, filled with minute, oblong sporules, 3—4 x ½—¾ μ, hyaline.

NOTES ON FUNGI FROM WESTERN KANSAS, U. S. A.

BY W. T. SWINGLE, MANHATTAN, KANSAS.

The species mentioned in the following list were collected in the western part of Kansas, U. S. A., during the fall of 1887. The specimens were sent to Prof. W. A. Kellerman to be identified. The species were named by him and myself, assisted by Mr. J. B. Ellis. In the notes, I have included: 1st, species new to the state; 2d, species on host plants new to the state; 3d, species interesting on account of variations, etc.

The following species were collected in Rooks Co., Kan., by Mr. E. Bartholomew, during September and October, 1887.

UREDINEÆ.

ÆCIDIUM TUBERCULATUM, E. & K.—On *Callirrhoe involucrata*, Gr.

MELAMPSORA CROTONIS, Burrill.—On *Croton monanthogynus*, Mx., II and III; on *Croton Texensis*, Mull., II and III.

PHRAGMIDIUM MUCRONATUM (Pers.) Lk.—On *Rosa Arkansana*, Porter, II and III.

Puccinia flosculosorum (Alb. & Schw.) Bœhl.—On *Vernonia ovalifolia*, T. & G., III.

Puccinia Xanthii, Schw.—On *Ambrosia psilostachya*, DC., III.

Uromyces appendiculata (Pers.)—On *Phaseolus*, sp. cult., III.

Uromyces Scirpi, Burrill.—On *Scirpus atrovirens*, Muhl., III.

Uromyces graminicola, Burrill.—On *Panicum virgatum*, L., III.

Uromyces Œnotheræ, Burrill.—On *Œnothera Fremontii*, Watson, III. (Identified by Ellis.)

SPHÆROPSIDEÆ.

Phoma Virginiana, Ell. & Halsted.—On *Prunus Virginiana*, L.

Vermicularia sparsipila, E. & K.—On *Callirrhoe involucrata*, Gr. *Æcidium tuberculatum*, E. & K., occurs on the same leaves.

Phyllosticta Celtidis, E. & K.—On *Celtis occidentalis*, L.

Phyllosticta viticola, Thum.—On *Vitis riparia*, Mx. The specimens agree with the description in every respect.

Septobia Glycyrrhizæ, E. & K.—On *Glycyrrhiza lepidota*. Nutt.

Septoria Grossulariæ, West.—On *Ribes aureum*, Ph.

Septoria lactucicola, E. & M.—On *Lactuca Floridana*, DC. Sterile.

Phleospora Celtidis, E. & M.—On *Celtis occidentalis*, L.

Piggotia Fraxini, B. & C.—On *Fraxinis viridis*, Mx.

Glœosporium Argemonis, E. & E.—On *Argemone platyceras*, Link & Otto (Journ. Mycol., Vol. III, p. 129.

Glœosporium Toxicodendri, E. & M.—On *Rhus Toxicodendron*, L. Spores 40—60 x 2½—3 μ, nucleate, not "12—15 x 5—6 μ". Specimens collected at Manhattan, Ks., July, 1887, by Kellerman & Swingle have spores 27—40 x 2—2½ μ.

DEMATIEÆ.

Cercospora altheina, Sacc.—On *Callirrhoe involucrata*, Gr. Hyphæ 60—75 x 3—5 μ, somewhat submerged at base, having shoulder-like projections, seemingly open at end; conidia 75—120 x 2—3 μ, slightly clavate, hyaline, multiseptate.

Cercospora clavata (Gerard) Pk.—On *Asclepias speciosa*, Torr. Spots none; hyphæ amphigenous, effused, forming large, irregular dark patches.

Cercospora Cucurbitæ, E. & E.—On *Cucurbita perennis*, Gr. (Journ. Mycol., Vol. IV, p. 3).

Cercospora glandulosa, E. & K.—On *Ailanthus glandulosus*, Desf. Agrees with description in Journ. Mycol., Vol. I, p. 3, except that the conidia are 24—36 x 2—4 μ not "70—100 x 3—3½ μ".

Cercospora Helianthi, E. & E.—On *Helianthus doronicoides*, Lam. Typical form (Journ. Mycol., Vol. III, p. 20). Mr. Bartholomew also sent the amphigenous form mentioned in Journ. Mycol., Vol. III, p. 6, on *Helianthus Maximiliana*, Schrad. The specimens he sent have the following characters: Hyphæ amphigenous, clustered, light coffee-color, 60—120 x 4—6 μ; septate, nucleate, irregularly bent, especially

at the tip; conidia 60—105 x 3—6 μ, clavate, 2—3-septate, very light coffee-color, slightly nucleate. The tufts of hyphæ are usually more abundant on the lower side of the leaf.

CERCOSPORA OXYBAPHI, Ell. & Halsted.—On *Oxybaphus nyctagineus*, Sweet. Very good specimens.

CERCOSPORA ROSÆCOLA, Pass.—On *Rosa Arkansana*, Porter.

CERCOSPORA PACHYPUS, E. & K.—On *Helianthus petiolaris*, Nutt., Form mentioned in JOURN. MYCOL., Vol. IV, p. 7. The specimens sent have the following characters: Spots at first minute, white, then increasing in size and finally becoming dirty brown; hyphæ amphigenous, olivaceous, clustered, 36—45 x 6—8 μ; conidia slightly colored, at first globular, finally 40—90 x 5—7 μ, 1—3-septate. The leaves are often overrun with the spots, giving them a peculiar pale appearance.

CERCOSPORA SILPHII, E. & E.—On living radical leaves of *Silphium integrifolium*, MX. The conidia were larger than the description in the JOURN. MYCOL., Vol. IV, p. 3, states. They were 75—100 x 3—6 μ, instead of "70—80 x 3 μ".

CERCOSPORA ASCLEPIODORÆ, E. & K.—(JOURN. MYCOL., Vol. IV, p. 6.) On *Asclepias Jamesii*, Torr.

CHYTRIDIACEÆ.

SYNCHYTRIUM FULGENS, Schrœter.—On radical leaves of *Œnothera biennis*, L.

The following species were collected by Mr. M. A. Carleton in October, 1887:

UREDINEÆ.

PUCCINIA ANGUSTATA, Pk.—On *Scirpus*, Mitchell county, Kansas. Teleutospores.

PUCCINIA PHRAGMITES (Schum.) Kornick.—On *Spartina cynosuroides*, Willd., Mitchell Co., Kan. Teleutospores.

MUCEDINEÆ.

PERONOSPORA EFFUSA (Grev.)—On *Chenopodium album*, L., Cloud Co., Kan.

DEMATIEÆ.

CERCOSPORA ASCLEPIADIS, Ell.—On *Asclepias* (*arenaria*) *Cercospora clavata* (Gerard) also occurs on the under sides of the same leaves. Cloud Co., Kan.

NEW LITERATURE.

BY W. A. KELLERMAN.

"UNCINULA POLYCHÆTA, B. & C." By S. M. Tracy & B. T. Galloway, Botanical Gazette, February, 1888.

"SOME RESULTS OF MYCOLOGICAL WORK IN U. S. DEPT. OF AGRICULTURE." F. Lamson Scribner, Botanical Gazette, January, 1888.

"IOWA PYRENOSPOREÆ AND A DRY SEASON." Byron D. Halsted, Botanical Gazette, March, 1888.

One species of *Phytophthora*, twenty of *Peronosporea* and four of *Cystopus* are spoken of in detail and the conclusion drawn was that the species of this group are best suited to moist weather. The genus *Cystopus* was less influenced by drouth. When the *Peronosporeæ* flourished it was with succulent herbs.

"HEINRICH ANTON DE BARY: NOTICE OF DEATH AND REVIEW OF HIS LIFE." l. c.

"A SATISFACTORY RULING AT LAST," being a letter from the third assistant postmaster general containing the ruling that labels accompanying specimens may contain name of species, date of collecting and collector's name, the rate of postage remaining that for fourth class matter. l. c.

"THE DEATH OF DE BARRY." Letter by Wm. R. Dudley to the editors of Botanical Gazette. l. c.

"DE LA FORMATION DE DEUX HYMENIUMS FERTILES SUR L'UNE ET L'AUTRE FACE DU CHAPEAU DANS UN POLYPORUS APPLANATUS, WALLR." Par Edouard Heckel. Revue Mycologique, Janvier, 1888.

"UN NOUVEAU GENRE DE PYRENOMYCETES SPHERIACEES." Note de P. A. Saccardo. l. c.

The genus and its diagnosis is as follows: *Berlesiella*, Sacc. Perithecia subcarbonacea, atra, globulosa, stromate pulvinato vel hemispharico, v. effuso carbonaceo, inserta, discreta vel basi tantum connexa, botryoso-prominula, setosa, ostiola minuto vel obsoleto; asci elongati (spurie paraphysati, octospori); sporidia ovoideo-oblonga 2-pluri septata et muriformia, e hyalino flaveolo. A *Cucurbitaria* et *Botryosphæria* vere diversum.

"FUNGI EUROPÆI PRECIPUE GALLICI EXSICCATI." Centurie XLIVe, C. Roumeguere. l. c.

"LE NOUVEAU GENRE PELTOSPAÆRIA." Par A. N. Berlese. l. c.

Peltosphœria, Berl. Perithecia sparsa, epidermide tecta et basi ligno infossa sursum clypeo stromatico atro tecta raro bina subeodem clypeo; ostiola vix erumpentia, brevia; asci cylindracei, sessiles, paraphysati, octospori; sporidia monosticha ovoidea, septata, muriformia.

"THE CHARACEÆ OF AMERICA." By T. F. Allen. Part I. Introduction, Morphology, Classification, pp. 1-64.

"MONOGRAFIA DEI GENERI PHLEOSPORA, CLATHROSPORA E PYRENOPHORA." Di Augusto Napoleone Berlese. Nuovo Giornale Botanico Italiano. 31 Gennaio, 1888, pp. 5-176.

"RABENHORST'S KRYPTOGAMEN-FLORA." Pilze von Dr. G. Winter. 29th Lieferung, Discomycetes (Pezizaceæ); bearbeitet von Dr. H. Rehm, pp. 65-128.

"THE MYCOLOGIC FLORA OF THE MIAMI VALLEY, OHIO." By A. P. Morgan, continued from p. 18, Vol. X. The Journal of the Cincinnati Society of Natural History, Vol. X, No. 4.

"BULLETIN OF THE NEW YORK STATE MUSEUM OF NATURAL HISTORY," Vol. I, No. 2, May, 1887. Contributions to the botany of the state of New York. By Charles H. Peck, state botanist.

Thirteen of the species are figured on two lithographic plates; the articles are as follows:

"Descriptions of New Species of New York Fungi."

"Descriptions of New York Species of Fungi belonging to the genera *Paxillus*, *Cantharellus* and *Craterellus*."

"Names of New York Species of Pyrenomycetous Fungi according to the Saccardoan arrangement."

"Descriptions of New York Species of viscid *Boleti*."

"ADDITIONS TO SCOTCH PERONOSPOREÆ." James W. H. Trail. The Scottish Naturalist, January, 1888.

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